

June 24, 2019

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Proposed Electric Vehicle Supply Equipment Standards

Dear Sir or Madam,

Pursuant to the April 23, 2019 *Notice of Public Hearing to Consider Proposed Electric Vehicle Supply Equipment Standards*, Electric Motor Werks, Inc. (eMotorWerks) respectfully provides the following comments on the California Air Resources Board's (CARB) proposed standards for publicly available EVSE.

eMotorWerks, a wholly owned subsidiary of the Enel Group, the global utility company, is a California-based leader in the electric vehicle (EV) charging market. eMotorWerks manufactures and sells smart, networked Level 2 EV supply equipment (EVSE), primarily the JuiceBox, the best-selling EV charger on Amazon, and has installed more than 42,000 units worldwide for residential, commercial, workplace, and fleet customers. Furthermore, eMotorWerks provides energy services to utilities, grid operators, fleet managers, and drivers through JuiceNet, its cloud-based software and aggregation platform, which is embedded in the JuiceBox and other manufacturers' hardware devices and integrates EV charging into the smart grid ecosystem.

CARB's proposed EVSE standards would be incorporated in the California Code of Regulations, Division 3, Title 13, in a new Chapter 8.3, pursuant to Senate Bill (SB) 454 (Corbett, 2013). The regulations would apply to all publicly accessible EVSE installed after July 1, 2020 for DC fast charging (DCFC) stations and July 1, 2023 for Level 2 stations, would require compliance for all existing, publicly accessible EVSE beginning on the latter of those dates or five years after the date of installation, and would mandate:

- Labeling compliant with 16 CFR Part 309, Subpart B – Requirements for Alternative Fuels, Subject group 31 § 309.17 a(3) [as amended April 23, 2013];
- The following payment methods, to be physically located or displayed on each EVSE or kiosk used to service that EVSE:
 - A non-locking, PCI – DSS Level 1 compliant credit card reader that accepts Euro Mastercard Visa (EMV) chip;
 - Mobile payment hardware; and
 - A toll-free number that allows a driver to initiate a charging session and payment;
- Minimum information to be disclosed to the driver at the point of sale;

- Compliance with the “California Open Charge Point Interface [OCPI] Test Procedures for Networked Electric Vehicle Supply Equipment for Level 2 and Direct Current Fast Charge Classes”;
- Initial data reporting, including contact information, EVSE model information, and available inventory and usage information, pertaining to an EV service provider’s (EVSP) existing or planned portfolio of publicly accessible EVSE in the state;
- Ongoing annual data reporting, due March 1 of each year, on EVSE inventory and usage information over the previous year, including:
 - Newly installed and decommissioned EVSE;
 - Total number of charging sessions initiated via credit card, [near-field communication] NFC reader (mobile payment), toll-free number, membership RFID card, EVSP application (smartphone app), or other forms of payment;
 - Total annual EVSE operational time, and percentage of operational time that certain payment transactions were unable to occur due to non-functioning readers;
- Data reporting to the National Renewable Energy Laboratory (NREL), updated monthly, describing an EVSP’s inventory of publicly available EVSE; and
- Civil penalties for non-compliance.

eMotorWerks appreciates the efforts of CARB Staff and industry stakeholders to successfully implement the provisions of SB 454, and especially recognize Staff’s willingness to engage with EVSPs throughout the rulemaking process. eMotorWerks supports the overarching goal of the statute to increase access to publicly accessible EV charging stations and believe Staff have acted in good faith to further this goal through the proposed regulations.

That said, eMotorWerks believes the regulations go beyond the letter and intent of the statute in a few key areas, would inappropriately bind industry to outdated hardware solutions, and would impose unnecessary cost burdens upon EVSPs and EVSE site hosts. In turn, the regulations as proposed would likely reduce the number of charging station installations and suppress competition among hardware and software vendors. eMotorWerks provides the following comments and recommendations on CARB’s proposed EVSE standards, with an eye to furthering the objectives of the regulations in a way that EVSPs can practically and cost-effectively implement without hindering the state’s climate goals.

1. Mandating both credit card readers and mobile payments goes against statute.

Section 44268.2 (a) (1) of Chapter 8.7, Part 5, Division 26 of the Health and Safety Code, implemented by SB 454, states that “[a]n electric vehicle charging station that requires payment of a fee shall allow a person desiring to use the station to pay via credit card or mobile technology, or both.” Isolated from the rest of the sentence, “pay via credit card or mobile technology” could be interpreted one of two ways: 1) EVSPs have the choice to offer drivers, at a minimum, either a credit card or a mobile payment option; or 2) drivers should have the option

to pay via credit card or mobile technology. The presence of “or both” at the end of the sentence effectively rules out the second interpretation and leaves it to the EVSP to determine if they want to provide both options. CARB’s proposed regulations thus inappropriately mandate the “or both” portion of the language, negating the antecedent language providing EVSPs the option to offer one of the two payment methods.

To comply with SB 454, eMotorWerks recommends the following revisions to § 2360.2 -- Payment Method Requirements for Electric Vehicle Supply Equipment:

(d) All EVSE subject to this section shall have, **at a minimum, either a credit card reader or mobile payment hardware** physically located on either the EVSE unit or a kiosk used to service that EVSE. ~~The~~ **If an EVSP elects to install credit card hardware reader, it shall comply with all of the following requirements:**

[...]

~~(e) All EVSE subject to this section shall have a mobile payment hardware physically located on the EVSE or kiosk used to service that EVSE.~~

2. The regulations should not mandate EMV chip readers for EVSPs that choose to offer drivers a credit card payment option.

EMV chip-enabled credit cards are now ubiquitous in the United States following their widespread deployment in 2015. However, credit card payment technology is evolving rapidly, with banks increasingly rolling out solutions such as contactless credit cards that utilize NFC technology. What is more, EMV chip reader hardware is relatively expensive to implement, and could expose drivers to credit card fraud through the use of “shimmers” that criminals can install in EMV chip readers.

As such, it is inappropriate to hardcode EMV chip readers as the one accepted credit card payment method for fee based public EVSE. The regulations as proposed would bind EVSPs to a costly 2015 technology, even though the regulations theoretically wouldn’t apply in some instances until June 30, 2028. In turn, this could lead to the unintended consequence of reducing competition in the EVSP space by deterring potential new entrants to the California market who would otherwise not install an EMV chip credit card reader. Further, this requirement would subject EV drivers who use unsupervised public EVSE to potential fraud through credit card shimming, irrespective of the PCI – DSS Level 1 security requirement. For these reasons, eMotorWerks recommends the following revisions to § 2360.2 -- Payment Method Requirements for Electric Vehicle Supply Equipment (inclusive of the proposed revisions to the same section in (1) above):

(d) All EVSE subject to this section shall have, **at a minimum, a credit card reader or mobile payment hardware** physically located on either the EVSE unit or a kiosk used to

service that EVSE. ~~The~~ **If an EVSP elects to install credit card hardware reader, it shall comply with all of the following requirements:**

(1) ~~The EVSE credit card reader shall accept, at a minimum, Euro Mastercard Visa (EMV) chip, and, at a minimum, one of Visa, MasterCard or American Express.~~

(2) ~~The~~ **If the EVSE contains credit card hardware reader, it shall be non-locking and shall always permit customers to remove credit cards without damage to the card, including during a fault situation or power failure.**

(3) ~~The~~ **complete financial transaction from the credit card hardware reader device through the payment processor chain shall comply with PCI – DSS Level 1.**

3. Existing public EVSE should not be required to comply with the going-forward payment regulations.

California has set aggressive goals for EVSE deployment, with Governor Brown's Executive Order B-48-18¹ calling for 250,000 EV chargers, including 10,000 DCFC ports, to be installed by 2025. As of the filing date of these comments, one source² estimates that California has over 20,000 public EV charging ports -- under 10% of the 2025 goal with around six-and-a-half years remaining.

CARB's proposed regulations would require existing EVSE to comply with the payment hardware standards within five years of the installation date or by the regulations' effective date, whichever is later. Compliance in this instance effectively means that existing stations in good working order will have to be completely replaced, as Level 2 and DCFC stations cannot simply be retrofitted with the required payment hardware. Depending on the EVSP's business model, replacement costs would be entirely borne by site hosts, who have purchased and installed the EVSE, or would be internalized by own-and-operate EVSPs, who by no means have allocated budget to replace functional assets. Faced with the requirement to completely replace the EVSE for it to remain in public operation, site hosts will likely either cut off public access to the station or have it decommissioned entirely.

This element of the proposed regulations is counterproductive to California's transportation electrification and greenhouse gas reduction goals. Existing public EVSE in many instances have been deployed utilizing ratepayer, state, or other public funding sources. Requiring retrofits would thus be extremely profligate considering the state's sizeable investment in EV

¹ <https://www.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/index.html>

² United States Department of Energy Alternative Fuels Data Center, "Alternative Fueling Station Counts by State," <https://afdc.energy.gov/stations/states>.

charging infrastructure to date and would represent a significant setback to achieving the state's climate goals by risking site hosts' "privatization" or elimination of public EVSE. Also, these requirements will make EVSE hardware and software more expensive for own-and-operate EVSPs, who would look to recoup retrofit costs through going-forward station deployments.

Existing public EVSE successfully service "early adopter" EV drivers through memberships and network roaming agreements. If these early-deployed stations wish to access the growing population of EV drivers who prefer to access public stations without an EVSP membership, then CARB's accessibility regulations may induce the desired effects from EVSPs and site hosts simply through consumer demand without mandating the removal of serviceable equipment.

We posit that CARB's proposed regulations are forward-looking and intended for mass market EV adoption and should not apply to existing public EVSE. For these reasons, eMotorWerks recommends revising § 2360.2 Payment Method Requirements for Electric Vehicle Supply Equipment as follows:

(c) Compliance deadlines.

(1) DCFC compliance deadline. A DCFC EVSE installed on or after July 1, 2020, shall comply with the requirements of this section. ~~A DCFC EVSE installed prior to July 1, 2020, shall comply with the requirements of this section by five years from the date of installation, or July 1, 2020 (whichever is later).~~

(2) Level 2 EVSE compliance deadline. A Level 2 EVSE installed on or after July 1, 2023, shall comply with the requirements of this section. ~~A Level 2 EVSE installed prior to July 1, 2023, shall comply with the requirements of this section by five years from the date of installation, or July 1, 2023 (whichever is later).~~

4. Annual data reporting requirements on charging session payment methods and payment method downtime should be removed, as they would impose significant burdens on EVSPs and serve no discernable purpose.

Section 44268.2 (b) implemented by SB 454 requires an EVSP to disclose to NREL the geographic location, schedule of fees, accepted methods of payment, and the amount of network roaming charges for nonmembers, if any, of all publicly accessible EVSE in the EVSP's network. CARB's proposed regulations would go beyond this to require data initial and annual data reporting to CARB's Executive Officer pertaining to an EVSP's inventory and usage of public EVSE in the state. With regards to annual usage, the regulations would require an EVSP to submit, "per publicly available EVSE operated by the EVSP in California," summary statistics on the total number of charging sessions initiated through different payment types, as well as the percentage of total operational time drivers are not able to access different payment methods due to non-functioning hardware or otherwise.

The reporting requirements on annual payments and downtime would place a significant burden on EVSPs in terms of time and cost to gather, format, and submit data. When pressed on the rationale for these requirements during the April 2, 2019 webinar, CARB Staff responded that they would help determine EVSP compliance with the regulations.

eMotorWerks challenges this conclusion. The proposed annual usage data would provide CARB Staff a detailed understanding of consumer payment preferences, but they would serve no discernable purpose towards CARB's oversight or enforcement of the proposed EVSE standards. Instead, eMotorWerks asserts that compliance with the regulations can be adequately determined through initial reporting on an EVSP's EVSE model certification for each EVSE model operated in California,³ which includes fields for:

- (6) Type of payment devices installed;
- (8) EVSP toll-free number or numbers displayed on the EVSE model; and
- (9) EVSE model photos: front, back, payment hardware, fee display (if display is multiple pages, include photos of complete information)

eMotorWerks duly recommends the following revisions to § 2360.4 Reporting for Electric Vehicle Service Providers:

(i) Annual EVSE inventory and usage information. The annual EVSE inventory and usage report filed by the EVSP shall include all of the following information, broken down per publicly available EVSE operated by the EVSP in California:

[...]

~~(3) Total number of charging sessions started with a credit card.~~

~~(4) Total number of charging sessions started with an NFC.~~

~~(5) Total number of charging sessions started with a toll free number.~~

~~(6) Total number of charging sessions started with membership RFID card.~~

~~(7) Total number of charging sessions started with service provider application.~~

~~(8) Total number of other methods of payment, including sessions that did not require payment.~~

~~(9) Total time (in terms of percentage of total operational time) payment transactions were unable to occur due to nonfunctioning credit card reader or near field communication reader. Total operational time per EVSE, total operational time for credit card reader, total operational time for NFC, total operational time for toll free number, total operational time for RFID. Total operational time for annual period.~~

³ § 2360.4 (h) of the Proposed EVSE Standards.

5. Conclusion

eMotorWerks appreciates CARB's consideration of these comments and urges the Board to adopt the recommendations detailed herein. As proposed, the EVSE standards will make EV charging hardware and software more expensive due to greater EVSP operating costs and will unintentionally diminish the supply of accessible-to-all public charging. New entrants may also choose to avoid California altogether given the hardware and reporting requirements, and instead focus on growing EV markets elsewhere in the country.

The revisions proposed herein will allow EVSPs to work effectively towards the goal of universal EVSE access without constraining technology development or creating unnecessary cost burdens, which would distract from the state's objectives to deploy EV charging infrastructure. We look forward to working with CARB Staff and other industry stakeholders to ensure the successful implementation of these regulations.

Sincerely,

/s/ Marc Monbouquette

Marc Monbouquette
Senior Manager, Regulatory and Government Affairs
eMotorWerks